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VENEER - LOG PRODUCTION AND RECEIPTS, NORTH CENTRAL REGION 1976

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HIGHLIGHTS

Lake States

In 1976 veneer log production was 69.6 million board feet, up 1 percent from 1974. Upward trends in production from hard maple, red oak, and elm continued. Log exports increased 19 percent from 1974 to 6.3 million board feet. Michigan outproduced Wisconsin for the first year recorded since 1956.

Veneer log receipts were off 2 percent from 1974 at 66.3 million board feet. Demand fell significantly for aspen and soft maple. Imports from Canada were only one-half million board feet.

Thirty-four percent of fine residue and 28 percent of the bark residue at veneer plants was not used and presents a disposal problem that may be alleviated by expanded use as industrial fuel.

Central States

Central States loggers harvested 27.4 million board feet of veneer logs in 1976, off 6 percent from 1974. White oak was the leading species harvested, displacing walnut for the first time recorded. Compared to 1974, exports rose 14 percent to 6.3 million board feet. Missouri may become a more important veneer log source if red and white oak continue to be favored species.

Compared to 1974, veneer logs receipts fell 9 percent to 36.1 million board feet. Imports of 15.0 million board feet came from 18 other states.

Disposal of wood and bark residue at mills is not a problem; only 6 percent of the wood and 7 percent of the bark was not used.

VENEER-LOG PRODUCTION AND RECEIPTS, NORTH CENTRAL REGION, 1976

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This report of 1976 veneer log production and receipts in the North Central Region is a continuation of a series begun more than 20 years ago. Veneer logs constitute the third most valuable roundwood product harvested (about $26 million F.O.B. mill) in the Region, outranked only by pulpwood and saw logs.

Current detailed veneer log production[1] and receipt information is necessary for intelligent planning and decisionmaking in wood procurment, forest resource management, and forest industry development. In addition, researchers need veneer log harvest and receipt information for planning projects and analyzing and appraising the veneer industry.

All but one veneer mill in the United States and Canada using North Central States timber reported their veneer log receipts in 1976 by species groups and State of origin. Their cooperation is gratefully acknowledged. Receipts were estimated for the nonresponding mill. Statistics for one large specialty veneer mill are excluded from this report to avoid disclosure of its operations (fig. 1). Data on logs exported to countries other than Canada are not shown.

All of the mills, except those in the northeast, were canvassed by this Station. A similar study by the Northeastern Forest Experiment Station provided data for veneer logs harvested in North Central States that were shipped to northeastern mills.

This report presents the results of the survey, analyzes and interprets the data where appropriate, compares results with 1974 or earlier years, and discusses trends in veneer log production and use. After a brief national overview, the report is divided into two sections—Lake States (Michigan, Minnesota, and Wisconsin) and Central States (Illinois, Indiana, Iowa, and Missouri)—because different species are grown and used as veneer logs in each area. Moreover, less information can be released about the Central States because more detailed data would reveal the operations of individual mills.

Fifty-six veneer mills operated in the Region in 1976; 38 were standard[2] veneer mills and 18 were container[3] veneer mills. Since 1974 two standard veneer mills closed (one in Wisconsin and one in Michigan), two merged in Indiana, and a large one began operating in Michigan. No container veneer mills completely ceased production, but two or three appear to be marginal operations.

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[1] *Production is the volume of veneer logs cut from a specific area; receipts are the volume of veneer logs received by mills in a specific area regardless of geographic source.*

[2] *Commercial, face, and specialty veneer mills that manufacture veneer used in doors, furniture, wall panels, exterior sheathing, specialty plywood, and similar items.*

[3] *Mills that manufacture veneer used in boxes, crates, packing cases, and other wood veneer containers.*

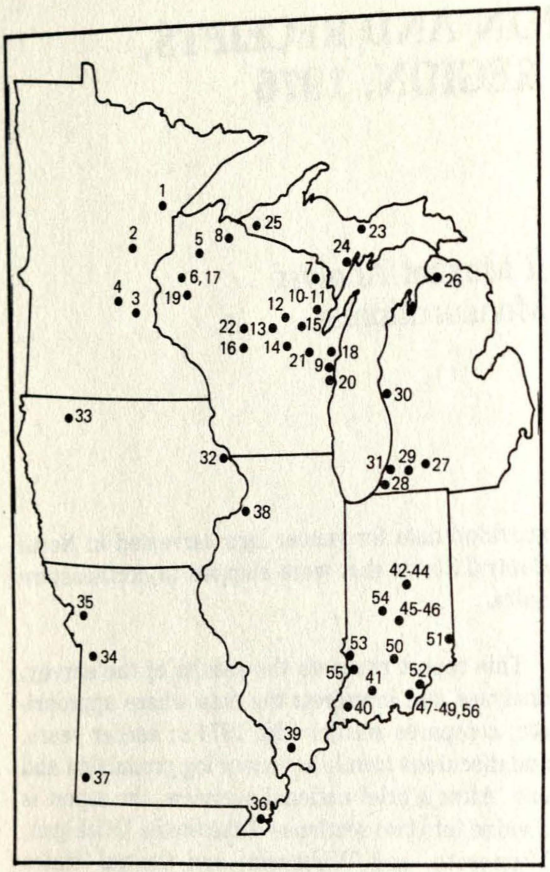

Figure 1.—*Location of active veneer mills in the North Central Region, 1976.*

NATIONAL OVERVIEW

Hardwood plywood production recovered in 1976 from 1975, but remained 11 percent below 1974 at 1.463 billion square feet[4] surface measure. Annual imports (for consumption) of hardwood plywood rose 44 percent between 1974 and 1976. Thus domestic manufacturers are facing severe competition from foreign sources.

Housing and furniture markets improved during 1976. Demand for high-grade veneers for furniture remained strong as walnut, red oak, pecan, maple, and cherry continued to dominate the market. However, veneer producers faced difficulties in marketing lower grade veneers because many furniture manufacturers switched from low-grade veneers for backs and drawer bottoms to prefabricated imports of these items or to hardboard or other materials.

[4]*Source: U.S. Department of Commerce, Bureau of the Census. Current Industrial Report Series MA-24F.*

Type of mill	Number	Name of mill	Location
		MINNESOTA	
Standard	1	Diamond International Co.[1]	Cloquet
	2	Wahkon Veneer Mills	Wahkon
Container	3	Allen Wood Products, Inc.	Hopkins
	4	Elk River Box Company	Elk River
		WISCONSIN	
Standard	5	Birchwood Lumber & Veneer Co.	Birchwood
	6	Birchwood Mfg. Co.	Rice Lake
	7	Louisiana-Pacific Corp.	Goodman
	8	Lousiiana-Pacific Corp.	Mellen
	9	Eggers Plywood Co.	Two Rivers
	10	Gillett Veneer & Plywood Co.	Gillett
	11	Linwood, Inc.	Gillett
	12	Wisconsin Timber & Land Co.	Matoon
	13	Hatley Veneer Co., Inc.	Hatley
	14	Marion Plywood Corp.	Marion
	15	Weber Veneer & Plywood Co.	Shawano
	16	Weyerhaeuser Co.	Marshfield
Container	17	Bruneete Box & Veneer	Rice Lake
	18	Dufeck Mfg. Co.	Denmark
	19	Ebner Box Factory	Cameron
	20	Konz Container Co.	Howard Grove
	21	Seymour Woodenware Co.	Seymour
	22	Standard Container Co.	Edgar
		MICHIGAN	
Standard	23	Cliffs Forest Products Co.	Munsing
	24	Anthony & Co.	Escanaba
	25	Iron Wood Products	Bessemer
	26	Manthei Bros.	Petosky
Container	27	A. C. Hensel Mfg. Co.	Augusta
	28	Anderson Container Co.	Stevensville
	29	Fruit Growers Package Co.	Paw Paw
	30	Michigan Crate & Basket	Shelby
	31	Riverside Package Co.	Riverside
		IOWA	
Standard	32	R. S. Bacon Veneer Co.	Dubuque
	33	Iowa Veneers, Inc.	Spencer
		MISSOURI	
Standard	34	Vario Veneer Corp.	Pleasant Hill
	35	Missouri Valley Walnut Co.	St. Joseph
Container	36	Betz Tipton Veneer Co.	Caruthersvill
	37	Crumbliss Wood Products	Neosho
		ILLINOIS	
Standard	38	Swords Veneer & Lumber Co.	Rock Island
Container	39	The Martin Bros. Container & Timber Products, Inc.	Karnak
		INDIANA	
Standard	40	Evansville Veneer Co.	Evansville
	41	Jasper Veneer Mills	Jasper
	42	Central Veneer Co., Inc.	Indianapolis
	43	Curry Miller Veneers, Inc.	Indianapolis
	44	Indiana Veneers, Inc.	Indianapolis
	45	David R. Webb Co.	Edinburg
	46	Amos Hill Veneer Co.	Edinburg
	47	B. L. Curry & Sons	New Albany
	48	Chester B. Stem, Inc.	New Albany
	49	Adams Custom Veneer Co.	New Albany
	50	National Veneer & Lumber Co.	Seymour
	51	Pierson-Holowell Co., Inc.	Lawrenceburg
	52	Roberts & Strack Veneer Co.	Clarksville
	53	Ford Sawmill Inc. (Veneer Div.)	Vincennes
	54	Theising Veneer Co., Inc.	Mooresville
Container	55	Farrell Box Co., Inc.	Decker
	56	New Albany Box & Basket Co., Inc.	New Albany

[1]Receipts not recorded to avoid disclosure of operations at this mill.

Private housing starts were 1,540,000 units in 1976, a rise of 33 percent from the 29-year production low of 1975. Rising housing starts lead to better markets for veneer producers serving the wall paneling, kitchen cabinet, door, and furniture manufacturers.

Spending for home improvements has grown rapidly from about $12 billion in 1968 to nearly $30 billion in 1976. Popular items for the do-it-yourselfer have been two hardwood plywood products—prefinished wall paneling and laminated block flooring.

LAKE STATES

Production

Loggers harvested 69.6 million board feet of veneer logs in the Lake States in 1976, a gain of 900,000 board feet from 1974. More than 90 percent of the harvest was standard veneer logs; the rest was container veneer logs. Log markets strengthened in 1976 because the housing and furniture industries were recovering from low levels of production during 1974 and 1975. Many of the standard veneer mills sell veneer and plywood products to the housing and furniture suppliers and manufacturers.

Five species accounted for 85 percent of the total volume:

Species	Million board feet
Aspen	21.8
Hard maple	14.0
Red oak	11.8
Elm	6.7
Yellow birch	4.5

Recent upward trends continued in 1976 in hard maple, red oak, and elm veneer log production (fig. 2). Annual elm harvests are rising because high-quality logs are being salvaged from trees infected with Dutch Elm disease. Major changes in veneer log production between 1974 and 1976 were:

Species	Thousand board feet	Percent
Aspen	-2,432	-10
Hard maple	+2,312	+20
Soft maple	-967	-48

Log exports from the Lake States increased 19 percent from 1974 to 6.3 million board feet. Major export markets by volume were:

Destination	Thousand board feet
Indiana	2,618
Canada	2,425
Kentucky	614

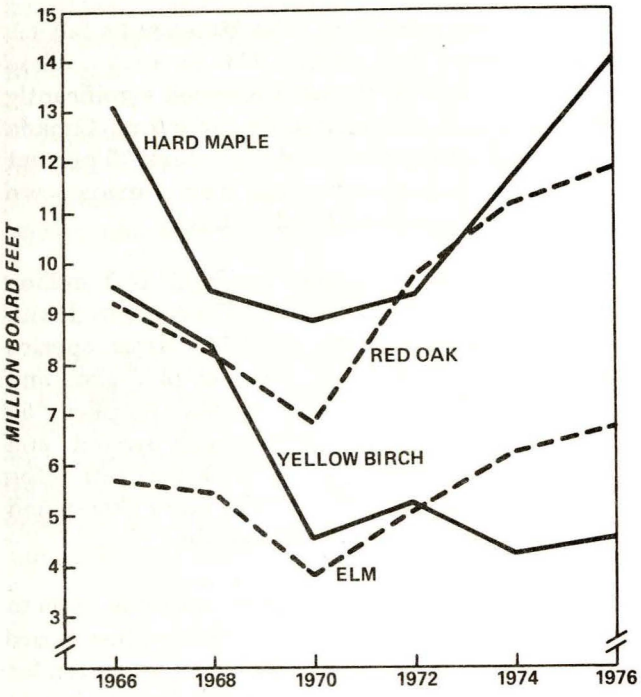

Figure 2.—*Veneer-log production of four major species for selected years, Lake States, 1966-1976.*

Michigan outproduced Wisconsin for the first recorded year since 1956 with a harvest of 33.4 million board feet. The new Michigan mill provided another important market for Michigan logs. Principal species cut were aspen and hard maple. Hard maple log production rose 2.5 million board feet above 1974. Wisconsin mills received 31 percent of the volume and 14 percent went outside the Lake States. Major species shipped out-of-state were hard maple, red oak, and yellow birch.

Wisconsin cut 31.7 million board feet of veneer logs, primarily aspen, red oak, elm, and hard maple. Aspen output fell 3.8 million board feet from 1974. Less than 4 percent of the harvest was

shipped outside the Lake States because of the large concentration of mills in and near Wisconsin.

Of the 4.6 million board feet of veneer logs produced in Minnesota, out-of-state mills procured 89 percent. Red oak, elm, and aspen were the primary species cut.

Mill Receipts

Veneer log receipts at Lake States mills fell 1.2 million board feet from 1974 to 66.3 million board feet in 1976. Demand dropped significantly for aspen and soft maple. Imports from Canada were one-half million board feet, down 76 percent from 1974. Import reductions from Canada were mainly hard maple and yellow birch.

Wisconsin veneer mills received 37.0 million board feet of veneer logs in 1976 compared with 41.6 million board feet in 1974. Major species procured were red oak, hard maple, elm, and yellow birch. Wisconsin forests supplied 56 percent of the volume, Michigan 28 percent, and Minnesota 8 percent. Nearly all (96 percent) of the imports to the Lake States from other States and Canada were shipped to Wisconsin.

Receipts rose in 1976 at nine Michigan mills to 28.8 million board feet from 25.3 million board feet in 1974. Aspen and hard maple accounted for 86 percent of the volume. Lake States forests furnished all the logs shipped to Michigan.

Minnesota's mills received 0.6 million board feet of veneer logs, unchanged from 1974.

Plant Residue[5]

As in 1974, more than 99 percent of the coarse residue generated at Lake States veneer mills was used. However, the use of the coarse residue changed because of the energy crisis. Coarse residue use for industrial fuel tripled between 1974 and 1976 while use of coarse residue for fiber products was halved. Meanwhile, use of fine residue for industrial fuel climbed to 58 percent of the total from 32 percent, and the same use of bark increased to 69 percent from 59 percent. The 34 percent of the fine residue and 28 percent of the bark not used has potential use as fuel.

[5] *Plant residue at veneer mills is classed as:* (1) *bark;* (2) *coarse (wood)—suitable for chipping, such as veneer cores;* (3) *fine (wood)—not suitable for chipping, such as veneer clippings.*

CENTRAL STATES

Production

Central States loggers cut 27.4 million board feet of veneer logs in 1976, off 6 percent since 1974 and about 10 million board feet less than a decade earlier (fig. 3). Of this total, 87 percent (23.8 million board feet) was standard veneer logs, and the remainder was used for container veneer.

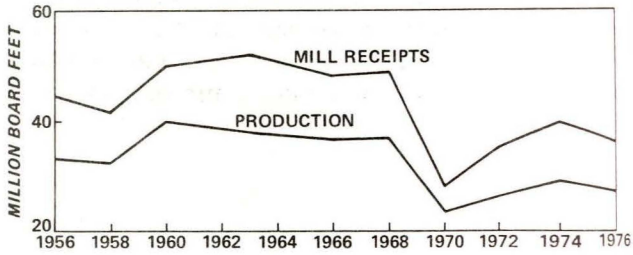

Figure 3.—*Veneer-log production and mill receipts in the Central States, 1956-1976.*

Major species cut were:

Species	Million board feet
White oak	7.7
Walnut	7.6
Red oak	3.8
Cottonwood	2.3

For the first time recorded, walnut was not the leading species harvested. White oak production advanced from only 1.7 million board feet cut in 1970 to the top position. Oak showed strong gains in importance for furniture in 1976. Red oak, also heavily used for furniture and cabinets, displaced cottonwood (used for containers) for third place in volume cut.

Principal harvest changes between 1974 and 1976 were:

Species	Thousands board feet
White oak	+2,516
Red Oak	+853
Cottonwood	-1,692
Walnut	-964

Exports moved 14 percent higher than in 1974 to 6.3 million board feet; primary buyers were in Kentucky (38 percent), Wisconsin (38 percent), and Ohio (9 percent).

Indiana supplied more than half (55 percent) of the Central States veneer log harvest. More than four-fifths of Indiana's production remained in the State. Iowa, the most lightly forested of the Central States, was the second-place producer, but relies heavily on Wisconsin markets for veneer logs. Missouri, heavily forested with oak, furnished only 10 percent of the veneer-log volume and only 8 percent of the oak harvest. If red and white oak continue to be favored veneer species, Missouri is likely to be a more important source of veneer logs.

Mill Receipts

Veneer log receipts dipped to 36.1 million board feet at 25 Central States mills in 1976 from 39.7 million board feet in 1974. Fifteen million board feet were imported from 18 other states representing all areas of the country except the far West. Ohio, Kentucky, Michigan, Oklahoma, and Pennsylvania each supplied more than one million board feet. Major imports included white oak from Ohio, pecan from Oklahoma, and hard maple from Michigan.

Indiana's 17 veneer mills received 83 percent of the total log receipts in 1976 including more than 90 percent of the pecan, black cherry, yellow-poplar, and hard maple.

Plant Residue

Disposal of wood and bark residue at mills is not a problem; only 6 percent of the wood and 7 percent of the bark was not used. Bark used increased from 70 percent in 1974 to 93 percent in 1976. Veneer mills burned nearly two-thirds of the residue as fuel. Other uses were for pulp manufacturing, mulch, and livestock bedding.

APPENDIX

Table 1.—*Production and imports of veneer logs, Lake States, 1976*
(In thousand board feet, International 1/4-inch log rule)

SPECIES AND DESTINATION	PRODUCTION BY STATES 1/				IMPORTS			TOTAL RECEIPTS 2/
	MICHIGAN	MINNESOTA	WISCONSIN	REGIONAL TOTAL	OTHER U.S.	CANADA	TOTAL IMPORTS	
PINE								
MICHIGAN	0	0	108	108	0	0	0	108
WISCONSIN	106	0	188	294	0	0	0	294
TOTAL	106	0	296	402	0	0	0	402
ASH								
MICHIGAN	67	0	0	67	0	0	0	67
WISCONSIN	49	31	761	841	34	0	34	875
EXPORTED 3/	29	2	26	57	0	0	0	0
TOTAL	145	33	787	965	34	0	34	942
ASPEN								
MICHIGAN	10939	418	9614	20971	0	0	0	20971
MINNESOTA	0	0	6	6	0	0	0	6
WISCONSIN	18	0	465	483	0	0	0	483
EXPORTED 3/	0	368	0	368	0	0	0	0
TOTAL	10957	786	10085	21828	0	0	0	21460
BASSWOOD								
MICHIGAN	346	0	0	346	0	0	0	346
MINNESOTA	0	191	0	191	0	0	0	191
WISCONSIN	170	265	982	1417	300	0	300	1717
EXPORTED 3/	115	0	0	115	0	0	0	0
TOTAL	631	456	982	2069	300	0	300	2254
BEECH								
MICHIGAN	437	0	0	437	0	0	0	437
WISCONSIN	546	0	11	557	0	0	0	557
EXPORTED 3/	177	0	0	177	0	0	0	0
TOTAL	1160	0	11	1171	0	0	0	994
BLACK CHERRY								
MICHIGAN	92	0	0	92	0	0	0	92
WISCONSIN	21	0	66	87	11	0	11	98
EXPORTED 3/	66	0	0	66	0	0	0	0
TOTAL	179	0	66	245	11	0	11	190

TABLE 1 CONTINUED ON NEXT PAGE

TABLE 1 CONTINUED

SPECIES AND DESTINATION	PRODUCTION BY STATES 1/				IMPORTS			TOTAL RECEIPTS 2/
	MICHIGAN	MINNESOTA	WISCONSIN	REGIONAL TOTAL	OTHER U.S.	CANADA	TOTAL IMPORTS	
BUTTERNUT								
WISCONSIN	0	0	14	14	0	0	0	14
EXPORTED 3/	1	0	184	185	0	0	0	0
TOTAL	1	0	198	199	0	0	0	14
COTTONWOOD								
MICHIGAN	559	0	0	559	0	0	0	559
MINNESOTA	0	43	0	43	0	0	0	43
WISCONSIN	0	83	749	832	0	0	0	832
TOTAL	559	126	749	1434	0	0	0	1434
ELM								
MICHIGAN	19	0	108	127	0	0	0	127
WISCONSIN	1108	628	4478	6214	3	0	3	6217
EXPORTED 3/	59	161	140	360	0	0	0	0
TOTAL	1186	789	4726	6701	3	0	3	6344
GUM								
MICHIGAN	6	0	0	6	0	0	0	6
TOTAL	6	0	0	6	0	0	0	6
HARD MAPLE								
MICHIGAN	3645	0	0	3645	0	0	0	3645
MINNESOTA	0	5	0	5	0	0	0	5
WISCONSIN	4835	186	3363	8384	122	234	356	8740
EXPORTED 3/	1968	0	16	1984	0	0	0	0
TOTAL	10448	191	3379	14018	122	234	356	12390
PAPER BIRCH								
MICHIGAN	625	0	0	625	0	0	0	625
WISCONSIN	207	137	255	599	0	85	85	684
EXPORTED 3/	0	12	0	12	0	0	0	0
TOTAL	832	149	255	1236	0	85	85	1309
PECAN								
EXPORTED 3/	49	0	7	56	0	0	0	0
TOTAL	49	0	7	56	0	0	0	0
RED OAK								
MICHIGAN	224	0	0	224	0	0	0	224
MINNESOTA	0	87	0	87	0	0	0	87
WISCONSIN	1201	1565	7232	9998	1746	0	1746	11744
EXPORTED 3/	1389	24	114	1527	0	0	0	0
TOTAL	2814	1676	7346	11836	1746	0	1746	12055

TABLE 1 CONTINUED ON NEXT PAGE

TABLE 1 CONTINUED

SPECIES AND DESTINATION	PRODUCTION BY STATES 1/				IMPORTS			TOTAL RECEIPTS 2/
	MICHIGAN	MINNESOTA	WISCONSIN	REGIONAL TOTAL	OTHER U.S.	CANADA	TOTAL IMPORTS	
SOFT MAPLE								
MICHIGAN	248	0	0	248	0	0	0	248
MINNESOTA	0	82	26	108	133	0	133	241
WISCONSIN	130	42	514	686	184	0	184	870
EXPORTED 3/	7	0	0	7	0	0	0	0
TOTAL	385	124	540	1049	317	0	317	1359
SYCAMORE								
MICHIGAN	61	0	0	61	0	0	0	61
WISCONSIN	0	0	0	0	11	0	11	11
TOTAL	61	0	0	61	11	0	11	72
WALNUT								
EXPORTED 3/	169	9	531	709	0	0	0	0
TOTAL	169	9	531	709	0	0	0	0
WHITE OAK								
MICHIGAN	50	0	0	50	0	0	0	50
WISCONSIN	1	0	47	48	0	0	0	48
EXPORTED 3/	512	72	25	609	0	0	0	0
TOTAL	563	72	72	707	0	0	0	98
YELLOW BIRCH								
MICHIGAN	1028	0	0	1028	0	0	0	1028
WISCONSIN	1870	77	1464	3411	0	175	175	3586
EXPORTED 3/	35	0	0	35	0	0	0	0
TOTAL	2933	77	1464	4474	0	175	175	4614
YELLOW-POPLAR								
MICHIGAN	170	0	0	170	0	0	0	170
WISCONSIN	18	16	161	195	0	0	0	195
EXPORTED 3/	1	0	0	1	0	0	0	0
TOTAL	189	16	161	366	0	0	0	365
OTHER HARDWOODS								
WISCONSIN	0	3	2	5	1	0	1	6
EXPORTED 3/	0	52	28	80	0	0	0	0
TOTAL	0	55	30	85	1	0	1	6
ALL SPECIES								
MICHIGAN	18516	418	9830	28764	0	0	0	28764
MINNESOTA	0	408	32	440	133	0	133	573
WISCONSIN	10280	3033	20752	34065	2412	494	2906	36971
EXPORTED 3/	4577	700	1071	6348	0	0	0	0
TOTAL	33373	4559	31685	69617	2545	494	3039	66308

1/ VERTICAL COLUMNS OF FIGURES UNDER BOX HEADING PRODUCTION BY STATES PRESENT THE AMOUNT OF VENEER LOGS CUT IN EACH STATE.

2/ PRODUCTION MINUS EXPORTS PLUS IMPORTS.

3/ VENEER LOGS SHIPPED TO STATES OUTSIDE THE LAKE STATES AND TO CANADA.

Table 2.—*Mills using five species of Lake States veneer logs, by location, 1976*
(In numbers)

Location	Red oak	Hard maple	Yellow birch	Elm	Aspen
Lake States	16	15	9	15	9
Indiana	5	6	--	1	--
Illinois	1	1	--	1	--
Iowa	--	--	--	--	--
Ohio	--	1	--	--	--
Kentucky	1	1	--	1	--
Maryland	--	--	--	1	--
Canada	2	2	1	1	1
Total	25	26	10	20	10

Table 3.—*Veneer-log production and receipts in the Lake States by species, 1974 and 1976*

Species	Production			Receipts		
	1974	1976	change	1974	1976	change
Ash	752	979	+227	944	1236	+292
Basswood	263	316	+53	69	43	-26
Black cherry	198	135	-63	809	660	-149
Butternut	49	10	-39	274	194	-80
Cottonwood	3956	2264	-16992	5615	2584	-3031
Elm	664	42	-622	714	221	-493
Gum	1004	417	-587	1070	432	-638
Hard maple	1118	400	-718	1292	1364	+72
Pecan (hickory)	1166	975	-191	3618	4293	+675
Red oak	2944	3797	+853	3828	3068	-760
Soft maple	632	875	+243	670	560	-110
Sycamore	897	614	-283	1026	651	-375
Walnut	8518	7554	-964	10107	8264	-1843
White oak	5175	7691	+2516	7679	10821	+3142
Yellow-poplar	1225	1293	+68	1268	1393	+125
Other species	503	29	-474	748	304	-444
Total	29064	27391	-1673	39731	36088	-3643

Table 4.—*Veneer-log production by species group for selected years, Lake States, 1946-1976*

(In million board feet, International 1/4-inch log rule)

Year	Ash	Aspen	Bass-wood	Beech	Yellow birch	Cotton-wood	Elm	Hard maple	Soft maple	Red oak	White oak	Paper birch	Walnut	Other species	All species
1946	2.3	4.0	10.4	5.6	[1]26.8	0.4	16.6	[2]40.3	--	[3]3.1	--	--	--	1.1	110.6
1952	--	1.4	10.4	3.1	[1]18.2	--	11.5	[2]23.8	--	[3]5.1	--	--	--	[4]4.7	78.2
1954	.8	.3	9.2	3.2	[1]17.3	2.7	10.5	[2]20.9	--	[3]5.5	--	--	--	1.6	72.0
1956	.7	.8	10.3	5.7	[1]20.3	2.1	9.6	20.1	3.7	[3]4.5	--	--	.3	.9	79.0
1958	.6	1.7	7.1	1.8	[1]13.1	2.2	8.9	9.7	2.2	[3]4.8	--	--	.2	.4	52.7
1960	1.0	2.1	6.2	1.0	[1]14.1	1.9	5.1	10.9	2.9	[3]7.6	--	--	.6	.6	54.0
1963	.6	1.5	6.6	.3	[1]10.9	.4	5.7	10.5	2.2	[3]8.9	--	--	2.3	.6	50.5
1965	.7	.6	6.0	.5	[1]11.3	1.4	6.3	11.8	1.8	[3]9.0	--	--	.9	1.4	51.7
1966	1.1	.7	4.5	.5	[1] 9.5	1.4	5.7	13.1	1.5	9.1	.3	--	1.5	2.0	50.9
1968	1.0	.6	3.6	.5	8.3	1.4	5.4	9.4	1.2	8.2	.5	1.9	1.7	1.8	45.5
1970	.4	1.3	3.2	.3	4.4	1.3	3.8	8.8	.8	6.8	.3	1.2	.6	1.2	34.4
1972	.6	2.6	2.9	1.1	5.2	1.3	5.1	9.2	1.0	9.7	.3	1.2	1.4	.6	42.2
1974	.9	24.2	2.4	.7	4.2	1.8	6.1	11.7	2.0	11.1	.6	1.3	1.0	.7	68.7
1976	1.0	21.8	2.1	1.2	4.5	1.4	6.7	14.0	1.1	11.8	.7	1.2	.7	1.4	69.6

[1] Includes paper birch.
[2] Includes soft maple.
[3] Includes white oak.
[4] Includes ash and cottonwood.

Table 5.—*Veneer-log production for selected years and type of industry, Lake States, 1946-1976*

(In million board feet, International 1/4 log rule)

Year	Standard	Container	Total
1946	72.7	37.9	110.6
1948	71.7	45.1	116.8
1950	47.3	39.3	86.6
1952	46.8	31.4	78.2
1954	45.3	26.7	72.0
1956	51.6	27.4	79.0
1958	40.3	12.4	52.7
1960	46.5	7.5	54.0
1962	41.0	6.6	47.6
1963	43.9	6.6	50.5
1965	44.6	7.1	51.7
1966	45.0	5.9	50.9
1968	40.6	4.9	45.5
1970	29.4	5.0	34.4
1972	38.0	4.2	42.2
1974	64.1	4.6	68.7
1976	65.0	4.6	69.6

Table 6.—*Lake States veneer-log production, receipts, exports, and imports for selected years, 1946-1976*

(In million board feet, International 1/4-inch log rule)

Year	Produced in the Lake States and received at Lake States mills:	Exported[1]	Imported[2]	Total production in Lake States	Total receipts in Lake States
1946	109.7	0.9	5.9	110.6	115.6
1948	116.0	.8	12.0	116.8	128.0
1950	86.0	.6	15.7	86.6	101.7
1952	77.8	.4	12.1	78.2	89.9
1954	71.6	.4	12.1	72.0	83.7
1956	78.7	.3	13.4	79.0	92.1
1958	51.5	1.2	6.0	52.7	57.5
1960	51.9	2.1	12.5	54.0	64.4
1963	45.0	5.5	7.7	50.5	52.7
1965	49.0	2.7	7.6	51.7	56.6
1966	45.8	5.1	9.6	50.9	55.4
1968	39.7	5.8	7.9	45.5	47.6
1970	31.4	3.0	5.6	34.4	37.0
1972	37.7	4.5	4.6	42.2	42.3
1974	63.4	5.3	4.1	68.7	67.5
1976	63.3	6.3	3.0	69.6	66.3

[1]From Lake States to other States and Canada.
[2]From other States and Canada into Lake States.

Table 7.—*Veneer-log receipts in the Lake States by species groups for selected years, 1952-1976*

(In million board feet, International 1/4-inch log rule)

Year	Ash	Aspen	Bass-wood	Beech	Yellow birch	Cotton-wood	Elm	Hard maple	Soft maple	Red oak	White oak	Paper birch	Other species	All species
1952	--	1.4	10.9	3.2	[1]27.1	--	11.7	[2]24.9	--	[3]5.3	--	--	[4]5.4	89.9
1954	.8	.3	10.3	3.2	[1]25.0	2.7	10.9	[2]22.4	--	[3]6.5	--	--	1.6	83.7
1956	.7	.8	10.6	5.7	[1]28.5	3.0	10.2	21.9	4.7	5.0	--	--	1.0	92.1
1958	.6	1.7	7.3	1.8	[1]17.2	2.2	9.2	9.6	2.5	5.0	--	--	.4	57.5
1960	1.1	2.1	6.8	.9	[1]18.9	3.3	6.2	12.2	3.6	8.4	--	--	.9	64.4
1963	.7	1.6	6.7	.3	[1]14.3	.7	4.9	11.1	2.6	9.3	--	--	.5	52.7
1965	.7	.6	6.3	.5	[1]14.5	2.1	6.3	13.2	1.9	9.3	--	--	1.2	56.6
1966	1.1	.7	4.8	.5	[1]14.7	2.3	5.8	12.8	1.8	9.7	.2	--	1.0	55.4
1968	1.0	.6	3.9	.5	10.2	2.1	5.2	9.0	1.3	8.3	.2	4.0	1.3	47.6
1970	.3	1.3	3.6	.3	6.1	1.4	3.8	9.0	.9	7.7	.2	1.9	.5	37.0
1972	.6	2.4	3.1	.7	6.3	1.3	5.3	9.4	1.2	10.1	.2	1.5	.2	42.3
1974	.9	24.3	2.6	.5	4.6	1.8	5.7	11.9	2.3	11.1	.1	1.3	.4	67.5
1976	.9	21.5	2.2	1.0	4.6	1.4	6.3	12.4	1.4	12.1	.1	1.3	1.1	66.3

[1]Includes paper birch.
[2]Includes soft maple.
[3]Includes white oak.
[4]Includes ash and cottonwood.

Table 8.—*Production and disposition of hardwood veneer plant residue by type of residue and use, Lake States, 1976*

(In thousand cubic feet)

State and type of use	Wood residue			Bark
	Total	Coarse[1]	Fine[2]	
Illinois, Iowa and Missouri				
Fiber products	32.0	32.0	--	--
Industrial fuel	221.3	49.9	171.4	103.4
Domestic fuel	7.4	7.4	--	.5
Miscellaneous[3]	19.7	19.7	--	13.1
Not used[4]	160.3	60.0	100.3	70.2
Total	440.7	169.0	271.7	187.2
Indiana				
Fiber products	342.3	149.3	193.0	--
Industrial fuel	1484.4	341.5	1142.9	738.7
Domestic fuel	3.5	3.5	--	--
Miscellaneous[3]	339.8	339.8	--	179.8
Not used[4]	4.4	--	4.4	5.1
Total	2174.4	834.41	1340.3	923.6
All Central States				
Fiber products	347.3	181.3	193.0	--
Industrial fuel	1705.7	391.4	1314.3	842.1
Domestic fuel	10.9	10.9	--	.5
Miscellaneous[3]	359.5	359.5	--	192.9
Not used[4]	164.7	60.0	104.7	75.3
Total	2615.1	1003.1	1612.0	1110.8

[1]Suitable for chipping, such as veneer cores.
[2]Not suitable for chipping, such as veneer clippings.
[3]Livestock bedding, mulch, small dimension and specialty items.
[4]Including residues burned as waste.

Table 9.—*Production and imports of veneer logs, Central States, 1976*

(In thousand board feet, International 1/4-inch log rule)

SPECIES AND DESTINATION	PRODUCTION BY STATES 1/					IMPORTS			TOTAL RECEIPTS 2/
	ILLINOIS	INDIANA	IOWA	MISSOURI	REGIONAL TOTAL	LAKE STATES	OTHER U.S.	TOTAL IMPORTS	
PINE									
INDIANA	0	0	0	0	0	0	257	257	257
ILL.-IOWA-MO.	0	0	0	0	0	0	6	6	6
TOTAL	0	0	0	0	0	0	263	263	263
ASH									
INDIANA	18	469	0	0	487	0	295	295	782
ILL.-IOWA-MO.	11	38	284	23	356	27	71	98	454
EXPORTED 3/	0	102	34	0	136	0	0	0	0
TOTAL	29	609	318	23	979	27	366	393	1236
BASSWOOD									
INDIANA	0	15	0	0	15	27	0	27	42
ILL.-IOWA-MO.	0	0	1	0	1	0	0	0	1
EXPORTED 3/	0	0	300	0	300	0	0	0	0
TOTAL	0	15	301	0	316	27	0	27	43
BLACK CHERRY									
INDIANA	1	94	0	0	95	57	457	514	609
ILL.-IOWA-MO.	0	5	24	0	29	0	22	22	51
EXPORTED 3/	0	0	11	0	11	0	0	0	0
TOTAL	1	99	35	0	135	57	479	536	660
BUTTERNUT									
INDIANA	0	0	0	0	0	179	0	179	179
ILL.-IOWA-MO.	4	0	6	0	10	5	0	5	15
TOTAL	4	0	6	0	10	184	0	184	194
COTTONWOOD									
INDIANA	65	668	0	0	733	0	99	99	832
ILL.-IOWA-MO.	1421	0	0	110	1531	0	221	221	1752
TOTAL	1486	668	0	110	2264	0	320	320	2584
ELM									
INDIANA	0	2	8	0	10	73	0	73	83
ILL.-IOWA-MO.	7	0	21	0	28	110	0	110	138
EXPORTED 3/	0	1	3	0	4	0	0	0	0
TOTAL	7	3	32	0	42	183	0	183	221

TABLE 9 CONTINUED ON NEXT PAGE

TABLE 9 CONTINUED

SPECIES AND DESTINATION	PRODUCTION BY STATES 1/					IMPORTS			TOTAL RECEIPTS 2/
	ILLINOIS	INDIANA	IOWA	MISSOURI	REGIONAL TOTAL	LAKE STATES	OTHER U.S.	TOTAL IMPORTS	
GUM									
INDIANA	2	386	0	0	388	0	41	41	429
ILL.,IOWA,MO.	3	0	0	0	3	0	0	0	3
EXPORTED 3/	19	0	0	7	26	0	0	0	0
TOTAL	24	386	0	7	417	0	41	41	432
HARD MAPLE									
INDIANA	0	265	0	0	265	998	57	1055	1320
ILL.,IOWA,MO.	4	7	1	0	12	32	0	32	44
EXPORTED 3/	0	1	122	0	123	0	0	0	0
TOTAL	4	273	123	0	400	1030	57	1087	1364
PECAN									
INDIANA	151	331	0	54	536	22	3364	3386	3922
ILL.,IOWA,MO.	4	5	271	91	371	0	0	0	371
EXPORTED 3/	8	18	0	42	68	0	0	0	0
TOTAL	163	354	271	187	975	22	3364	3386	4293
RED OAK									
INDIANA	42	1283	0	0	1325	682	667	1349	2674
ILL.,IOWA,MO.	35	40	279	2	356	33	5	38	394
EXPORTED 3/	144	360	1602	10	2116	0	0	0	0
TOTAL	221	1683	1881	12	3797	715	672	1387	3068
SOFT MAPLE									
INDIANA	44	265	0	0	309	0	20	20	329
ILL.,IOWA,MO.	231	0	0	0	231	0	0	0	231
EXPORTED 3/	17	1	264	53	335	0	0	0	0
TOTAL	292	266	264	53	875	0	20	20	560
SYCAMORE									
INDIANA	0	518	0	0	518	0	114	114	632
ILL.,IOWA,MO.	19	0	0	0	19	0	0	0	19
EXPORTED 3/	53	7	11	6	77	0	0	0	0
TOTAL	72	525	11	6	614	0	114	114	651
WALNUT									
INDIANA	654	2802	1481	362	5299	352	1379	1731	7030
ILL.,IOWA,MO.	97	5	279	452	833	102	299	401	1234
EXPORTED 3/	191	619	81	531	1422	0	0	0	0
TOTAL	942	3426	1841	1345	7554	454	1678	2132	8264
WHITE OAK									
INDIANA	1071	3962	0	38	5071	228	4225	4453	9524
ILL.,IOWA,MO.	178	152	75	587	992	12	293	305	1297
EXPORTED 3/	13	1314	59	242	1628	0	0	0	0
TOTAL	1262	5428	134	867	7691	240	4518	4758	10821

TABLE 9 CONTINUED ON NEXT PAGE

TABLE 9 CONTINUED

SPECIES AND DESTINATION	PRODUCTION BY STATES 1/					IMPORTS			TOTAL RECEIPTS 2/
	ILLINOIS	INDIANA	IOWA	MISSOURI	REGIONAL TOTAL	LAKE STATES	OTHER U.S.	TOTAL IMPORTS	
YELLOW BIRCH									
INDIANA	0	1	0	0	1	0	0	0	1
TOTAL	0	1	0	0	1	0	0	0	1
YELLOW-POPLAR									
INDIANA	11	1237	0	0	1248	0	145	145	1393
EXPORTED 3/	15	5	0	25	45	0	0	0	0
TOTAL	26	1242	0	25	1293	0	145	145	1393
OTHER HARDWOODS									
INDIANA	0	2	0	0	2	0	4	4	6
ILL.,IOWA,MO.	0	0	0	0	0	0	34	34	34
EXPORTED 3/	0	0	26	0	26	0	0	0	0
TOTAL	0	2	26	0	28	0	38	38	40
ALL SPECIES									
INDIANA	2059	12300	1489	454	16302	2618	11124	13742	30044
ILL.,IOWA,MO.	2014	252	1241	1265	4772	321	951	1272	6044
EXPORTED 3/	460	2428	2513	916	6317	0	0	0	0
TOTAL	4533	14980	5243	2635	27391	2939	12075	15014	36088

1/ VERTICAL COLUMNS OF FIGURES UNDER BOX HEADING PRODUCTION BY STATES PRESENT THE AMOUNT OF VENEER LOGS CUT IN EACH STATE.
2/ PRODUCTION MINUS EXPORTS PLUS IMPORTS.
3/ VENEER LOGS SHIPPED TO STATES OUTSIDE THE CENTRAL STATES AND TO CANADA.

Table 10.—*Veneer-log production and receipts in the Central by species, 1974 and 1976*

(In thousand board feet, International 1/4-inch log rule)

Species	Production			Receipts		
	1974	1976	change	1974	1976	change
Ash	891	965	+74	861	942	+81
Aspen	24260	21828	-2432	24259	21460	-2799
Basswood	2387	2069	-318	2586	2254	-332
Beech	740	1171	+431	540	994	+454
Black cherry	74	245	+171	74	190	+116
Butternut	234	199	-35	11	14	+3
Cottonwood	1777	1434	-343	1774	1434	-340
Elm	6159	6701	+542	5677	6344	+667
Hard maple	11706	14018	+2312	11937	12390	+453
Paper birch	1277	1236	-41	1307	1309	+2
Pecan (hickory)	32	56	+24	1	--	-1
Red oak	11107	11836	+729	11098	12055	+957
Soft maple	2016	1049	-967	2313	1359	-954
Walnut	971	709	-262	--	--	--
White oak	561	707	+146	78	98	+20
Yellow birch	4172	4474	+302	4646	4614	-32
Other species	337	920	+583	327	851	+524
Total	68701	69617	+916	67489	66308	-1181

Table 11.—*Veneer-log production by species groups for selected years, Central States, 1956-1976*

(In million board feet, International 1/4-inch log rule)

Year	Cotton-wood	Elm	Hard maple	Pecan (hickory)	Red oak	Soft maple	Syca-more	Wal-nut	White oak	Yellow-poplar	Other species	All species
1956	8.0	0.9	0.8	0.1	1.1	1.8	0.6	10.6	3.4	1.6	4.2	33.1
1958	8.9	.6	1.1	.1	1.0	.5	.5	10.8	2.6	1.1	5.2	32.4
1960	11.2	2.0	1.2	.1	1.5	1.2	2.5	13.2	1.6	1.6	3.8	39.9
1963	7.4	.7	1.6	.8	.9	1.0	1.8	15.5	1.4	2.3	4.6	38.0
1966	6.2	1.7	1.4	1.1	2.3	.5	1.0	14.7	1.9	3.0	3.9	36.7
1968	4.1	.7	1.3	3.0	2.1	.4	1.2	16.1	3.6	1.3	3.2	37.0
1970	4.8	.6	.8	1.5	1.3	.5	1.3	8.1	1.7	.8	2.1	23.5
1972	3.5	.5	1.1	2.4	1.7	.4	.7	10.0	3.3	1.2	1.4	26.2
1974	4.0	.7	1.1	1.2	2.9	.6	.9	8.5	5.2	1.2	2.8	29.1
1976	2.3	(2)	.4	1.0	3.8	.9	.6	7.5	7.7	1.3	1.9	27.4

[1]Estimated.
[2]Less than 50 thousand board feet.

Table 12.—*Veneer-log receipts by species groups for selected years, Central States, 1956-1976*

(In million board feet, International 1/4-inch log rule)

Year	Cotton-wood	Elm	Hard maple	Pecan (hickory)	Red oak	Soft maple	Syca-more	Wal-nut	White oak	Yellow-poplar	Other species	All species
1956	10.9	0.8	1.2	0.6	1.3	0.8	1.3	11.4	6.7	2.8	6.6	44.4
1958	10.2	.6	1.7	.3	1.3	.3	1.2	13.0	4.8	1.9	6.3	41.6
1960	10.4	1.0	2.9	.2	1.4	.5	2.3	17.1	3.6	2.8	8.0	50.2
1963	8.6	1.0	3.1	1.6	.9	.8	2.0	21.2	2.3	2.8	7.9	52.2
1966	6.7	11.0	3.6	1.6	2.0	.4	1.2	17.9	2.1	4.4	7.3	48.2
1968	5.7	1.0	2.7	4.9	2.3	.5	1.1	18.4	5.2	1.9	5.1	48.8
1970	4.7	.5	1.3	3.0	.8	.6	1.4	10.0	2.0	1.1	2.6	28.0
1972	4.9	.3	2.4	5.7	1.6	.5	.9	11.0	4.0	1.2	2.6	35.1
1974	5.6	.7	1.3	3.6	3.8	.7	1.0	10.1	7.7	1.3	3.9	39.7
1976	2.6	.2	1.4	4.3	3.1	.5	.6	8.3	10.8	1.4	2.9	36.1

[1]Estimated.

Table 13.—*Production and disposition of hardwood veneer plant residue by type of residue and use, Central States, 1976*

(In thousand cubic feet)

State and type of use	Wood residue			Bark
	Total	Coarse[1]	Fine[2]	
Michigan				
Fiber products	439.5	420.9	18.6	12.8
Industrial fuel	272.9	20.0	252.9	317.6
Domestic fuel	43.8	16.8	27.0	18.6
Miscellaneous[3]	332.9	332.9	--	-
Not used[4]	1002.8	11.8	991.0	539.4
Total	2091.9	802.4	1289.5	888.4
Minnesota				
Industrial fuel	4.4	2.8	1.6	3.6
Domestic fuel	11.4	11.4	--	9.9
Miscellaneous[3]	3.6	1.8	1.8	--
Not used[4]	22.3	--	22.3	4.2
Total	41.7	16.0	25.7	17.7
Wisconsin				
Fiber products	319.5	236.9	82.6	--
Industrial fuel	2115.9	641.6	1474.3	1094.1
Domestic fuel	29.5	29.5	--	--
Miscellaneous[3]	212.2	119.1	93.1	7.5
Not used[4]	.8	.3	.5	35.2
Total	2677.9	1027.4	1650.5	1136.8
All Lake States				
Fiber products	759.0	657.8	101.2	12.8
Industrial fuel	2393.2	664.4	1728.8	1415.3
Domestic fuel	84.7	57.7	27.0	28.5
Miscellaneous[3]	548.7	453.8	94.9	7.5
Not used[4]	1025.9	12.1	1013.8	578.8
Total	4811.5	1845.8	2965.7	2042.9

[1]Suitable for chipping, such as veneer cores.
[2]Not suitable for chipping, such as veneer clippings.
[3]Livestock bedding, mulch, small dimension and specialty items.
[4]Including residues burned as waste.

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Shows 1976 veneer-log production and receipts by species in the Lake States (Michigan, Minnesota, and Wisconsin) and in the Central States (Illinois, Indiana, Iowa, and Missouri). Comparisons are made with similar data for 1974. Includes tables showing veneer-log production and receipts (for selected years) since 1946 in the Lake States and since 1956 in the Central States.

OXFORD: 832.20:792(77). KEY WORDS: imports, exports, veneer mills, wood residue, bark.

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